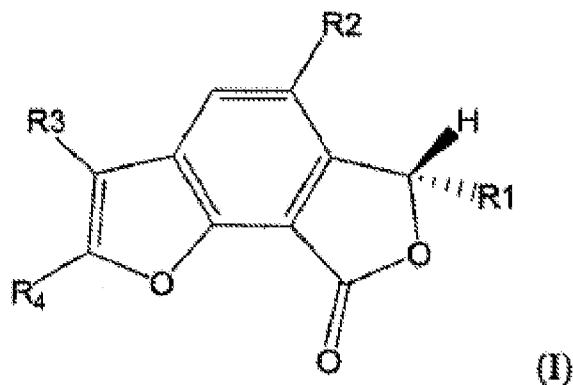


Claims

1. Compounds of the general formula (I) and their derivatives



in which

- R1 represents C₁-C₄ alkyl;
- R2 represents H, halogen, -OH, NRR' or -NO₂, wherein R and R' represent H or C₁-C₆ alkyl;
- R3 represents H, halogen, -OH, NRR' or -NO₂, wherein R and R' represent H or C₁-C₆ alkyl;
- R4 represents H, halogen or -NO₂.

10/576758

***** INVENTOR RESULTS *****

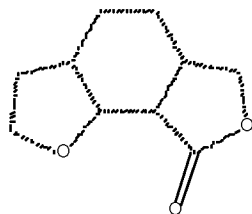
=> d his l19

(FILE 'HCAPLUS' ENTERED AT 11:10:14 ON 12 DEC 2008)

L19 3 S ((L12-L18) AND L4) OR (L4 AND L8)

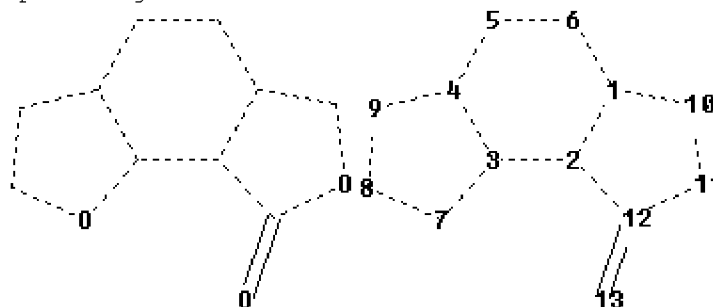
=> d que l19

L1 STR



Structure attributes must be viewed using STN Express query preparation:

Uploading L1.str



chain nodes :

13

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12

chain bonds :

12-13

ring bonds :

1-2 1-6 1-10 2-3 2-12 3-4 3-7 4-5 4-9 5-6 7-8 8-9 10-11 11-12

exact/norm bonds :

1-2 1-6 1-10 2-3 2-12 3-4 3-7 4-5 4-9 5-6 7-8 8-9 10-11 11-12 12-13

isolated ring systems :

containing 1 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:CLASS

L3 52 SEA FILE=REGISTRY SSS FUL L1

L4 22 SEA FILE=HCAPLUS ABB=ON PLU=ON L3

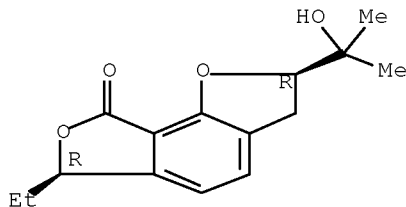
10/576758

L8 1 SEA FILE=HCAPLUS ABB=ON PLU=ON US20070155830/PN
L12 50007 SEA FILE=HCAPLUS ABB=ON PLU=ON LIU J?/AU
L13 12465 SEA FILE=HCAPLUS ABB=ON PLU=ON ZHENG Y?/AU
L14 2276 SEA FILE=HCAPLUS ABB=ON PLU=ON QIN X?/AU
L15 15784 SEA FILE=HCAPLUS ABB=ON PLU=ON YANG L?/AU
L16 3525 SEA FILE=HCAPLUS ABB=ON PLU=ON DONG Z?/AU
L17 15567 SEA FILE=HCAPLUS ABB=ON PLU=ON WANG R?/AU
L18 3211 SEA FILE=HCAPLUS ABB=ON PLU=ON TAN J?/AU
L19 3 SEA FILE=HCAPLUS ABB=ON PLU=ON ((L12 OR L13 OR L14 OR L15
OR L16 OR L17 OR L18)) AND L4) OR (L4 AND L8)

=> d l19 1-3 ibib abs hitstr

L19 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:488982 HCAPLUS Full-text
DOCUMENT NUMBER: 149:73557
TITLE: Induced daldinin A, B, C with a new skeleton from
cultures of the ascomycete *Daldinia concentrica*
AUTHOR(S): Shao, Hong-Jun; Qin, Xiang-Dong; Dong,
Ze-Jun; Zhang, Hong-Bin; Liu, Ji-Kai
CORPORATE SOURCE: State Key Laboratory of Phytochemistry and Plant
Resources in West China, Kunming Institute of Botany,
Chinese Academy of Sciences, Kunming, 650204, Peop.
Rep. China
SOURCE: Journal of Antibiotics (2008), 61(3), 115-119
CODEN: JANTAJ; ISSN: 0021-8820
PUBLISHER: Japan Antibiotics Research Association
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Daldinin A, B, C with a new skeleton, together with four known compds., were
induced and isolated from cultures of the ascomycete *Daldinia concentrica*.
Their structures were elucidated by spectroscopic anal., and that of daldinin
A was confirmed by single-crystal x-ray diffraction.
IT 1033349-51-7P, Daldinin B
RL: BSU (Biological study, unclassified); NPO (Natural product
occurrence); PRP (Properties); PUR (Purification or recovery); BIOL
(Biological study); OCCU (Occurrence); PREP (Preparation)
(induced daldinin A, B, C with new skeleton from cultures of ascomycete
Daldinia concentrica)
RN 1033349-51-7 HCAPLUS
CN Furo[2,3-e]isobenzofuran-8(2H)-one,
6-ethyl-3,6-dihydro-2-(1-hydroxy-1-methylethyl)-, (2R,6R)-rel-(-)- (CA
INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.
Currently available stereo shown.



IT 1033349-49-3P, Daldinin A

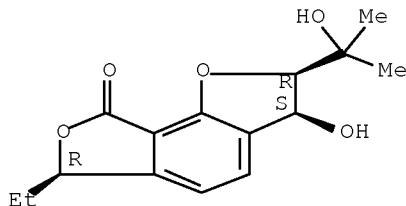
10/576758

RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(isolation of from cultures of ascomycete *Daldinia concentrica* and crystal and mol. structure of)

RN 1033349-49-3 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one,
6-ethyl-3,6-dihydro-3-hydroxy-2-(1-hydroxy-1-methylethyl)-,
(2R,3S,6R)-rel-(-)- (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.
Currently available stereo shown.



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:121182 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 144:346530

TITLE: Concentricolide, an anti-HIV agent from the ascomycete *Daldinia concentrica*

AUTHOR(S): Qin, Xiang-Dong; Dong, Ze-Jun;
Liu, Ji-Kai; Yang, Liu-Meng;
Wang, Rui-Rui; Zheng, Yong-Tang; Lu,
Yang; Wu, Yun-Shan; Zheng, Qi-Tai

CORPORATE SOURCE: State Key Laboratory of Phytochemistry and Plant
Resources in West China, Kunming Institute of Botany,
Chinese Academy of Sciences, Kunming, 650204, Peop.
Rep. China

SOURCE: Helvetica Chimica Acta (2006), 89(1), 127-133
CODEN: HCACAV; ISSN: 0018-019X

PUBLISHER: Verlag Helvetica Chimica Acta

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A novel benzofuran lactone, named concentricolide (=rel-(6R)-6-ethylbenzo[2,1-b:3,4-c']difuran-8(6H)-one; 1), was isolated along with four known compds. (friedelin, cytochalasin L-696,474, armillaramide, and russulamide) from the fruiting bodies of the xylariaceous ascomycete *Daldinia concentrica*. The structure of 1 was established by spectroscopic methods and x-ray crystallog. anal. Its anti-HIV-1 activity was tested. Results showed that 1 inhibited HIV-1 induced cytopathic effects. The EC50 value was 0.31 µg/mL. The therapeutic index (TI) was 247. Concentricolide exhibited the blockage (EC50 0.83 µg/mL) on syncytium formation between HIV-1 infected cells and normal cells.

IT 850078-65-8P

RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PAC (Pharmacological activity); PRP (Properties); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological

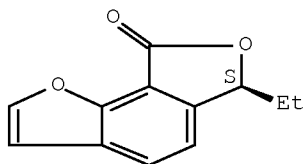
10/576758

study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(isolation, purification, and characterization of concentricolide from
ascomycete *Daldinia concentrica*)

RN 850078-65-8 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(6H)-one, 6-ethyl-, (6S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:371265 HCAPLUS Full-text

DOCUMENT NUMBER: 142:392220

TITLE: Preparation of Concentricolide and its derivatives and
application as anti-HIV agent for pharmaceutical
compositions

INVENTOR(S): Liu, Jikai; Zheng, Yongtang;
Qin, Xiangdong; Yang, Liumeng;
Dong, Zejun; Wang, Ruirui; Tan,
Jianwen

PATENT ASSIGNEE(S): Kunming Institute of Botany, the Chinese Academy of
Sciences, Peop. Rep. China; Kunming Institute of
Zoology, the Chinese Academy of Sciences

SOURCE: PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

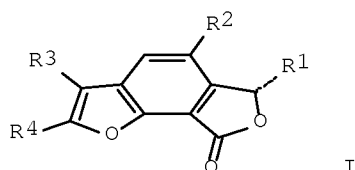
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005037841	A1	20050428	WO 2004-CN1188	20041020
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CN 1537855	A	20041020	CN 2003-10110784	20031022
CN 1238357	C	20060125		
DE 112004002032	T5	20061005	DE 2004-112004002032	20041020
JP 2007509080	T	20070412	JP 2006-535929	20041020

10/576758

US 20070155830 A1 20070705 US 2007-576758 20070305 <--
 PRIORITY APPLN. INFO.: CN 2003-10110784 A 20031022
 WO 2004-CN1188 W 20041020
 OTHER SOURCE(S): MARPAT 142:392220
 GI



AB Concentricolide and its derivs. I (R1 = C1-C4; R2 = H, halo, OH, NRR', R and R' = H, cl-c6 alkyl; R3 = H, halo, OH, NRR', NO2, R and R' = H, or C1-C6 alkyl; R4 = H, halo, NO2), are prepared from Daldinia concentrica via extraction with organic solvent to give Concentricolide A, further bromination, nitration, and alkylation to provide its derivs. Title compds. can be used as pharmaceutical compns. for treating and preventing the infection of human immunodeficiency virus (HIV).

IT 850078-65-8P

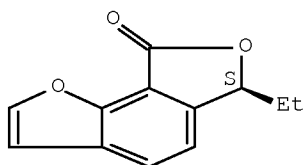
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); PUR (Purification or recovery); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of Concentricolide A as anti-HIV agent)

RN 850078-65-8 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(6H)-one, 6-ethyl-, (6S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 850078-66-9P 850078-67-0P 850078-68-1P
 850078-69-2P

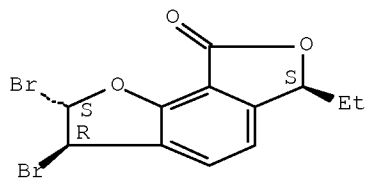
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of Concentricolide as anti-HIV agent)

RN 850078-66-9 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one, 2,3-dibromo-6-ethyl-3,6-dihydro-, (2S,3R,6S)- (CA INDEX NAME)

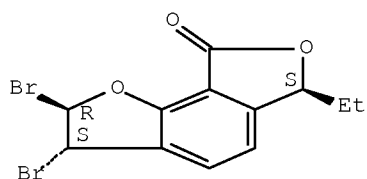
Absolute stereochemistry.



RN 850078-67-0 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one, 2,3-dibromo-6-ethyl-3,6-dihydro-,
(2R,3S,6S)- (CA INDEX NAME)

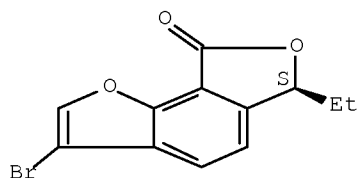
Absolute stereochemistry.



RN 850078-68-1 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(6H)-one, 3-bromo-6-ethyl-, (6S)- (CA INDEX
NAME)

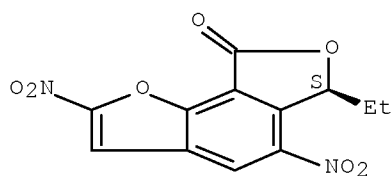
Absolute stereochemistry.



RN 850078-69-2 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(6H)-one, 6-ethyl-2,5-dinitro-, (6S)- (CA INDEX
NAME)

Absolute stereochemistry.



10/576758

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/576758

***** QUERY RESULTS *****

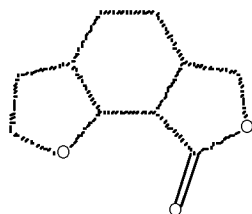
=> d his 120

(FILE 'HCAPLUS' ENTERED AT 11:10:14 ON 12 DEC 2008)

L20 19 S L4 NOT L19

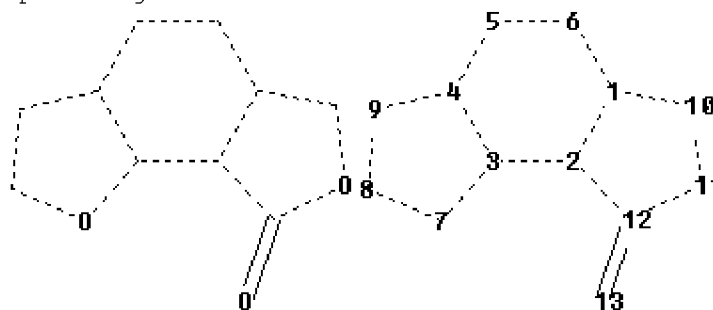
=> d que 120

L1 STR



Structure attributes must be viewed using STN Express query preparation:

Uploading L1.str



chain nodes :

13

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12

chain bonds :

12-13

ring bonds :

1-2 1-6 1-10 2-3 2-12 3-4 3-7 4-5 4-9 5-6 7-8 8-9 10-11 11-12

exact/norm bonds :

1-2 1-6 1-10 2-3 2-12 3-4 3-7 4-5 4-9 5-6 7-8 8-9 10-11 11-12 12-13

isolated ring systems :

containing 1 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom

11:Atom 12:Atom 13:CLASS

L3 52 SEA FILE=REGISTRY SSS FUL L1

10/576758

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L4          22 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3
L8          1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  US20070155830/PN
L12         50007 SEA FILE=HCAPLUS ABB=ON  PLU=ON  LIU J?/AU
L13        12465 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ZHENG Y?/AU
L14        2276 SEA FILE=HCAPLUS ABB=ON  PLU=ON  QIN X?/AU
L15        15784 SEA FILE=HCAPLUS ABB=ON  PLU=ON  YANG L?/AU
L16        3525 SEA FILE=HCAPLUS ABB=ON  PLU=ON  DONG Z?/AU
L17        15567 SEA FILE=HCAPLUS ABB=ON  PLU=ON  WANG R?/AU
L18        3211 SEA FILE=HCAPLUS ABB=ON  PLU=ON  TAN J?/AU
L19         3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (((L12 OR L13 OR L14 OR L15
OR L16 OR L17 OR L18))) AND L4) OR (L4 AND L8)
L20        19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L4 NOT L19

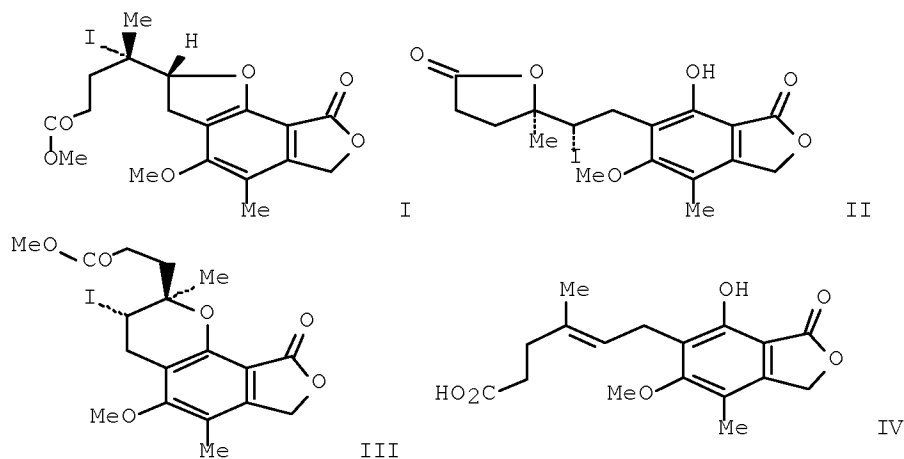
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=> d l20 1-19 ibib abs hitstr hitind

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L20  ANSWER 1 OF 19  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:      2007:600699  HCAPLUS  Full-text
DOCUMENT NUMBER:      148:308076
TITLE:                 The Stereo Structures of Some Mycophenolic Acid
                        Derivatives
AUTHOR(S):             Bernhardt, Paul V.; Carman, Raymond M.; Le, Tri T.
CORPORATE SOURCE:      Department of Chemistry, University of Queensland,
                        Brisbane, QLD 4072, Australia
SOURCE:                Australian Journal of Chemistry (2007), 60(5), 354-357
                        CODEN: AJCHAS; ISSN: 0004-9425
PUBLISHER:             CSIRO Publishing
DOCUMENT TYPE:         Journal
LANGUAGE:              English
OTHER SOURCE(S):       CASREACT 148:308076
GI

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AB  The mol. structure and configuration of three iodo compds. I, II and III,
IT  derived from mycophenolic acid (IV), were determined by X-ray crystallog.
    66341-96-6P
    RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

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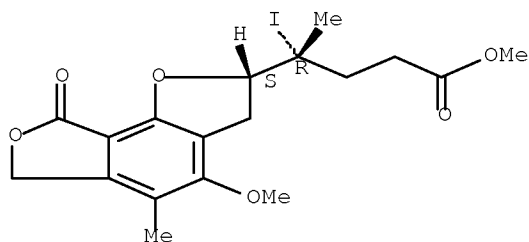
10/576758

(synthesis and crystal structure of mycophenolic acid iodo derivs.)

RN 66341-96-6 HCAPLUS

CN Benzo[2,1-b:3,4-c']difuran-2-butanoic acid,
2,3,6,8-tetrahydro- γ -iodo-4-methoxy- γ ,5-dimethyl-8-oxo-,
methyl ester, (γ R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.



IT 66341-95-5P 66342-09-4P

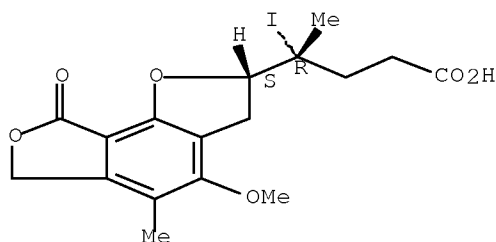
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

(synthesis and crystal structure of mycophenolic acid iodo derivs.)

RN 66341-95-5 HCAPLUS

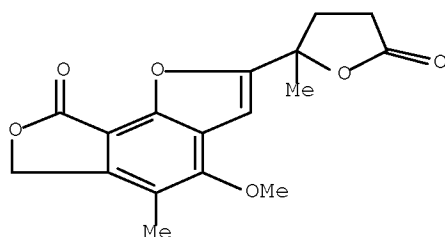
CN Benzo[2,1-b:3,4-c']difuran-2-butanoic acid,
2,3,6,8-tetrahydro- γ -iodo-4-methoxy- γ ,5-dimethyl-8-oxo-,
(γ R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 66342-09-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(6H)-one,
4-methoxy-5-methyl-2-(tetrahydro-2-methyl-5-oxo-2-furanyl)- (CA INDEX
NAME)



CC 26-6 (Biomolecules and Their Synthetic Analogs)
 Section cross-reference(s): 75
 IT 66341-91-1P 66341-96-6P 66341-98-8P 959326-75-1P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (synthesis and crystal structure of mycophenolic acid iodo derivs.)
 IT 66341-95-5P 66342-09-4P 1009565-31-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (synthesis and crystal structure of mycophenolic acid iodo derivs.)
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:924493 HCAPLUS Full-text
 DOCUMENT NUMBER: 146:184386
 TITLE: Intramolecular cycloaddition reaction of bromo- and
 nitro-substituted furanyl amides
 AUTHOR(S): Padwa, Albert; Crawford, Kenneth R.; Straub,
 Christopher S.
 CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta,
 GA, 30322, USA
 SOURCE: ARKIVOC (Gainesville, FL, United States) (2007), (8),
 14-25
 CODEN: AGFUAR
 URL: http://www.arkat-usa.org/ARKIVOC/JOURNAL_CONTENT/manuscripts/2007/WA-1982AP%20as%20published%20mainmanuscript.pdf
 PUBLISHER: Arkat USA Inc.
 DOCUMENT TYPE: Journal; (online computer file)
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 146:184386
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The intramol. Diels-Alder reaction (IMDAF) of an N-alkenyl-substituted furanyl amide (I, X = H) was investigated. Upon thermolysis at 80-110°, a smooth IMDAF reaction occurred to provide a stable aza-7-oxabicyclo[2.2.1]heptane cycloadduct (II) in high yield. The intramol. cyclization of the related 5-bromo-substituted furanyl amide (I, X = Br) was found to proceed at a much faster rate and in higher yield than the unsubstituted variant. The rate enhancement observed by incorporating a bromine in the 5-position of the furan ring appears to be general. The origin of the increased rate of cycloaddn. for the 5-bromo-substituted furan when compared to the unsubstituted example can be attributed to an increase in reaction exothermicity; this both decreases the activation enthalpy and increases the barrier to retrocycloaddn. Bromine substitution on furan also increases reactant energy and stabilizes the product due to the preference of the electroneg. bromine atom to be attached to a more highly alkylated, and therefore more electropos., framework. An unusual isomerization-cyclization reaction of a 5-nitro-substituted furanyl amide (III) was also found to occur, under microwave conditions, and provided a dihydrobenzofuropyridinone derivative (IV).
 IT 289673-97-8P 289673-98-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)

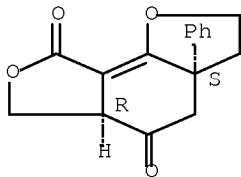
10/576758

(intramol. Diels-Alder reaction of furan derivs.)

RN 289673-97-8 HCAPLUS

CN Furo[2,3-e]isobenzofuran-5,8-dione, 2,3,3a,4,5a,6-hexahydro-3a-phenyl-,
(3aR,5aS)-rel- (CA INDEX NAME)

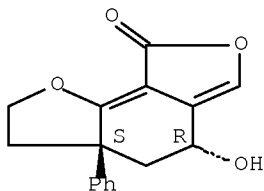
Relative stereochemistry.



RN 289673-98-9 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one,
3,3a,4,5-tetrahydro-5-hydroxy-3a-phenyl-, (3aR,5S)-rel- (CA INDEX NAME)

Relative stereochemistry.



CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))

IT 289673-97-8P 289673-98-9P 583052-88-4P 583053-07-0P
906344-83-0P 906344-86-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(intramol. Diels-Alder reaction of furan derivs.)

REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:530448 HCAPLUS Full-text

DOCUMENT NUMBER: 145:210776

TITLE: Use of Benzofuran for Concomitant Protection of
Aldehyde and Phenol Groups in the Preparation of
Mycophenolic Acid Analogues

AUTHOR(S): Fardis, Maria; Mertzman, Michael; Thomas, William;
Kirschberg, Thorsten; Collins, Nicole; Polniaszek,
Richard; Watkins, William J.

CORPORATE SOURCE: Gilead Sciences, Foster City, CA, 94404, USA

SOURCE: Journal of Organic Chemistry (2006), 71(13), 4835-4839
CODEN: JOCEAH; ISSN: 0022-3263

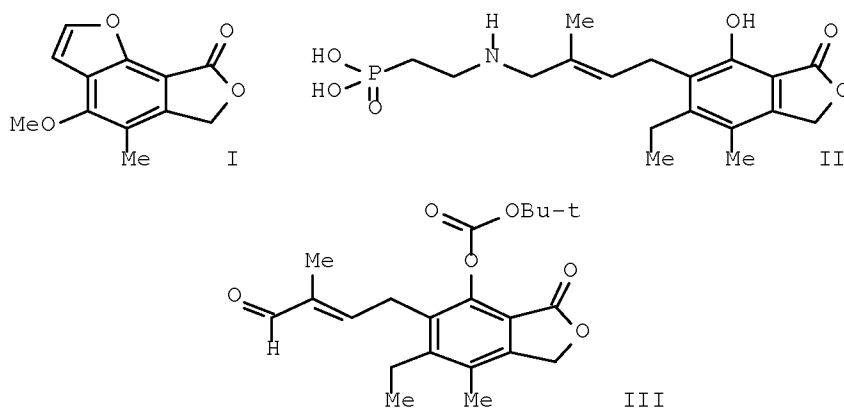
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 145:210776

GI



AB The use of a benzofuran to mask phenol and arylacetaldehyde moieties simultaneously in the synthesis of analogs of mycophenolic acid (MPA) was explored. Benzofuran I provided a stable and easily handled intermediate for the preparation of unnatural derivs. at the C-6 position of MPA. Preparation of the highly potent 6-Et MPA analog II was accomplished via aldehyde III through this facile route with high-yielding steps and crystalline intermediates.

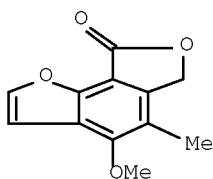
IT 903876-22-2P 903876-23-3P 903876-24-4F
903876-25-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of mycophenolic acid analogs via use of benzofuran as protection of aldehyde and phenol groups)

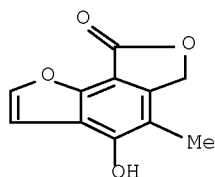
RN 903876-22-2 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(6H)-one, 4-methoxy-5-methyl- (CA INDEX NAME)

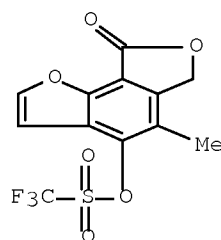


RN 903876-23-3 HCAPLUS

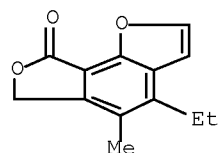
CN Furo[2,3-e]isobenzofuran-8(6H)-one, 4-hydroxy-5-methyl- (CA INDEX NAME)



RN 903876-24-4 HCAPLUS
 CN Methanesulfonic acid, 1,1,1-trifluoro-,
 6,8-dihydro-5-methyl-8-oxofuro[2,3-e]isobenzofuran-4-yl ester (CA INDEX
 NAME)



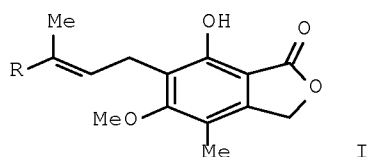
RN 903876-25-5 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-8(6H)-one, 4-ethyl-5-methyl- (CA INDEX NAME)



CC 26-6 (Biomolecules and Their Synthetic Analogs)
 IT 24953-96-6P 903876-22-2P 903876-23-3P
 903876-24-4P 903876-25-5P 903876-26-6P 903876-27-7P
 903876-28-8P 903876-29-9P 903876-30-2P 903876-31-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of mycophenolic acid analogs via use of benzofuran as
 protection of aldehyde and phenol groups)
 REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:499106 HCAPLUS Full-text
 DOCUMENT NUMBER: 145:166993
 TITLE: Phosphonic acid-containing analogs of mycophenolic
 acid as inhibitors of IMPDH
 AUTHOR(S): Watkins, William J.; Chen, James M.; Cho, Aesop;
 Chong, Lee; Collins, Nicole; Fardis, Maria; Huang,

Wei; Hung, Magdeleine; Kirschberg, Thorsten; Lee, William A.; Liu, Xiaohong; Thomas, William; Xu, Jie; Zeynalzadegan, Ameneh; Zhang, Jennifer
 CORPORATE SOURCE: Gilead Sciences, Inc., Foster City, CA, 94404, USA
 SOURCE: Bioorganic & Medicinal Chemistry Letters (2006), 16(13), 3479-3483
 CODEN: BMCLE8; ISSN: 0960-894X
 PUBLISHER: Elsevier B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 145:166993
 GI

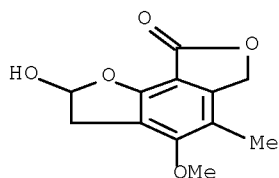


AB The design, synthesis, and IMPDH inhibitory activity of a series of phosphonic acid-containing analogs, such as I [R = XPO₃H₂, X = linking group, such as CH₂, (CH₂)₂, (CH₂)₃, CH₂OCH₂, CH:CH, CH₂NHCH₂, (CH₂)₂NHCH₂, (CH₂)₂N(COMe)CH₂, (CH₂)₂N(CHO)CH₂, (CH₂)₂N(SO₂Me)CH₂], of mycophenolic acid I [R = (CH₂)₂CO₂H] were described.

IT 402731-00-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (phosphonic acid-containing analogs of mycophenolic acid as inhibitors of IMPDH)

RN 402731-00-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one,
 3,6-dihydro-2-hydroxy-4-methoxy-5-methyl- (CA INDEX NAME)

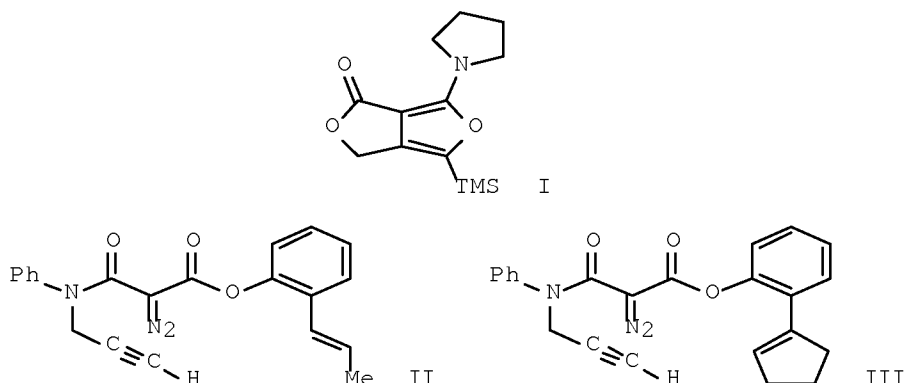


CC 26-6 (Biomolecules and Their Synthetic Analogs)
 Section cross-reference(s): 1, 7

IT 24280-92-0P 31327-49-8P 402731-00-4P 402731-02-6P
 790701-36-9P 790701-48-3P 790701-52-9P 790702-68-0P 790703-37-6P
 790703-46-7P 790703-66-1P 790703-76-3P 900865-64-7P 900865-65-8P
 900865-66-9P 900865-67-0P 900865-68-1P 900865-69-2P 900865-70-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (phosphonic acid-containing analogs of mycophenolic acid as inhibitors of IMPDH)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:943377 HCAPLUS Full-text
 DOCUMENT NUMBER: 138:170018
 TITLE: Synthesis of furo[3,4-c]furans using a rhodium(II)-catalyzed cyclization/Diels-Alder cycloaddition sequence
 AUTHOR(S): Padwa, Albert; Straub, Christopher S.
 CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
 SOURCE: Journal of Organic Chemistry (2003), 68(2), 227-239
 CODEN: JOCEAH; ISSN: 0022-3263
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 138:170018
 GI



AB A series of 2-alkynyl 2-diazomalonates, when treated with a catalytic quantity of rhodium(II) acetate, afforded furo[3,4-c]furans, e.g., I, in good yield. The reaction proceeds by addition of a rhodium-stabilized carbenoid onto the acetylenic π -bond to give a vinyl carbenoid that subsequently cyclizes onto the neighboring carbonyl group to produce the furan ring. These furo[3,4-c]furans react with various dienophiles, furnishing anisole derivs. derived by loss of water from the initially formed Diels-Alder cycloadducts. The Rh(II)-catalyzed cyclization reaction was quite versatile with regard to the nature of the interacting carbonyl group. The methodol. was applied to the synthesis of several oxa-polyheterocyclic systems by first generating a 2-alkoxy-substituted furan and then allowing it to undergo a subsequent intramol. Diels-Alder cycloaddn. Ring opening of the resulting cycloadduct is followed by deprotonation to furnish a rearranged keto lactone. The potential use of this method for the synthesis of the alkaloid strychnine was probed using suitable model diazo compds. To establish the viability of this approach, the Rh(II)-catalyzed cyclization/cycloaddn. sequence of α -diazo amides II and III were studied. Both compds. underwent the sequential process in good overall yield, leading to novel pentacyclic products. The structural features of the resultant products present numerous opportunities for postcycloaddn. manipulations that could be exploited to synthetic advantage.

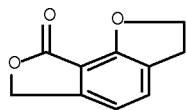
10/576758

IT 289673-95-6P 289673-96-7P 289673-97-8P
289673-98-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of polycyclic furans via rhodium catalyzed
cyclization/Diels-Alder cycloaddn. of propargyl diazo malonic esters)

RN 289673-95-6 HCAPLUS

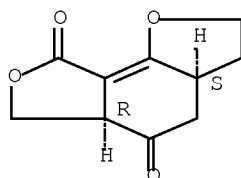
CN Furo[2,3-e]isobenzofuran-8(2H)-one, 3,6-dihydro- (CA INDEX NAME)



RN 289673-96-7 HCAPLUS

CN Furo[2,3-e]isobenzofuran-5,8-dione, 2,3,3a,4,5a,6-hexahydro-,
(3aR,5aS)-rel- (CA INDEX NAME)

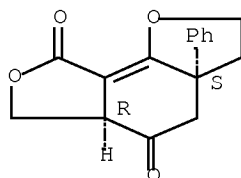
Relative stereochemistry.



RN 289673-97-8 HCAPLUS

CN Furo[2,3-e]isobenzofuran-5,8-dione, 2,3,3a,4,5a,6-hexahydro-3a-phenyl-,
(3aR,5aS)-rel- (CA INDEX NAME)

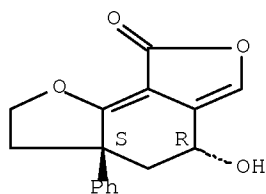
Relative stereochemistry.



RN 289673-98-9 HCAPLUS

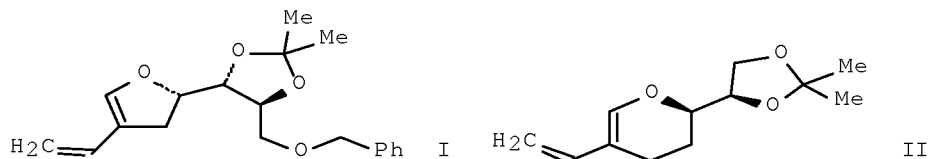
CN Furo[2,3-e]isobenzofuran-8(2H)-one,
3,3a,4,5-tetrahydro-5-hydroxy-3a-phenyl-, (3aR,5S)-rel- (CA INDEX NAME)

Relative stereochemistry.



CC 27-6 (Heterocyclic Compounds (One Hetero Atom))
 IT 289673-82-1P 289673-83-2P 289673-85-4P 289673-86-5P 289673-88-7P
 289673-89-8P 289673-90-1P 289673-93-4P 289673-95-6P
 289673-96-7P 289673-97-8P 289673-98-9P
 497070-65-2P 497070-69-6P 497070-70-9P 497070-71-0P 497070-72-1P
 497070-76-5P 497070-79-8P 497070-84-5P 497070-85-6P 497070-86-7P
 497070-95-8P 497070-96-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of polycyclic furans via rhodium catalyzed
 cyclization/Diels-Alder cycloaddn. of propargyl diazo malonic esters)
 REFERENCE COUNT: 97 THERE ARE 97 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:938126 HCAPLUS Full-text
 DOCUMENT NUMBER: 138:170042
 TITLE: A Facile Synthesis of Enantiopure Tricyclic Furanyl
 and Pyranyl Derivatives via Tungsten-Mediated
 Cycloalkenation and Diels-Alder Reaction
 AUTHOR(S): Huang, Heh-Lung; Liu, Rai-Shung
 CORPORATE SOURCE: Chemistry Department, National Tsing-Hua University,
 Hsinchu, Taiwan, Taiwan
 SOURCE: Journal of Organic Chemistry (2003), 68(3), 805-810
 CODEN: JOCEAH; ISSN: 0022-3263
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 138:170042
 GI



AB Chiral furanyl and pyranyl dienes I and II, bearing a chiral 1,3-dioxolane group which allows to control diastereoselective Diels-Alder reactions with electron-deficient olefins, were synthesized via cycloalkenylation of chiral tungsten alkynol complexes. Diels-Alder reactions of I and II with maleic anhydride, maleic imide, Ph maleimide, 1,4-benzoquinone, or 1,4-naphthoquinone gave stereoselectively the corresponding cycloadducts, which were further

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converted into common tricyclic furanyl and pyranyl derivs. by degradation of chiral 1,3-dioxolane substituents into hydrogen atoms.

IT 496920-56-0P 496920-83-3P

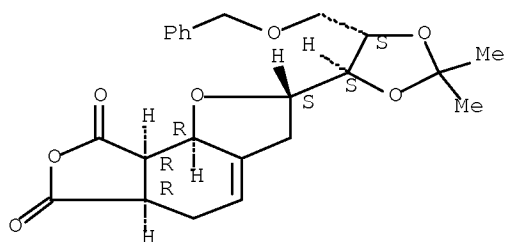
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of enantiopure tricyclic furanyl and pyranyl derivs. via tungsten-mediated cycloalkenylation and Diels-Alder reaction)

RN 496920-56-0 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione,
2-[(4S,5S)-2,2-dimethyl-5-[(phenylmethoxy)methyl]-1,3-dioxolan-4-yl]-
2,3,5,5a,8a,8b-hexahydro-, (2S,5aR,8aR,8bR)- (CA INDEX NAME)

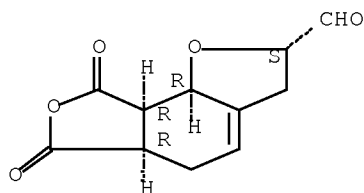
Absolute stereochemistry. Rotation (-).



RN 496920-83-3 HCAPLUS

CN Furo[2,3-e]isobenzofuran-2-carboxaldehyde,
2,3,5,5a,6,8,8a,8b-octahydro-6,8-dioxo-, (2S,5aR,8aR,8bR)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT 496920-87-7P

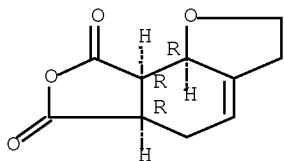
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of enantiopure tricyclic furanyl and pyranyl derivs. via tungsten-mediated cycloalkenylation and Diels-Alder reaction)

RN 496920-87-7 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2,3,5,5a,8a,8b-hexahydro-,
(5aR,8aR,8bR)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



CC 27-13 (Heterocyclic Compounds (One Hetero Atom))
 Section cross-reference(s): 29

IT 50622-09-8P 78513-03-8P 81028-12-8P 143360-25-2P 285565-67-5P
 496920-50-4P 496920-53-7P 496920-54-8P 496920-56-0P
 496920-58-2P 496920-60-6P 496920-62-8P 496920-71-9P 496920-73-1P
 496920-75-3P 496920-80-0P 496920-83-3P 496920-84-4P
 496920-85-5P 496920-92-4P 496920-94-6P 496920-96-8P 497064-88-7P
 497064-89-8P 497064-90-1P 497064-91-2P 497064-92-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of enantiopure tricyclic furanyl and pyranyl derivs. via
 tungsten-mediated cycloalkenylation and Diels-Alder reaction)

IT 496920-64-0P 496920-66-2P 496920-69-5P 496920-77-5P 496920-79-7P
 496920-82-2P 496920-87-7P 496920-89-9P 496920-91-3P
 496920-97-9P 496920-99-1P 496921-02-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of enantiopure tricyclic furanyl and pyranyl derivs. via
 tungsten-mediated cycloalkenylation and Diels-Alder reaction)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:856496 HCAPLUS Full-text
 DOCUMENT NUMBER: 138:152309
 TITLE: Microbial transformation of mycophenolic acid. Part II
 AUTHOR(S): Jekkel, A.; Barta, I.; Boros, S.; Suto, J.; Horvath,
 Gy.; Szabo, Zs.; Ambrus, G.
 CORPORATE SOURCE: IVAX Drug Research Institute Ltd., Budapest, H-1045,
 Hung.
 SOURCE: Journal of Molecular Catalysis B: Enzymatic (2002),
 19-20, 209-214
 CODEN: JMCEF8; ISSN: 1381-1177
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 138:152309

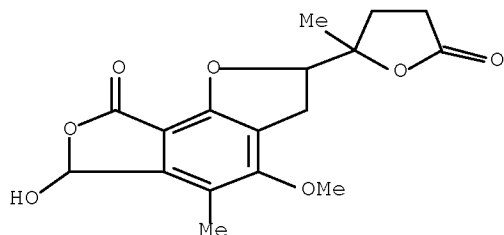
AB Bioconversion of mycophenolic acid (MPA, I) having considerable immuno-
 suppressant activity was attempted with a great number of microorganisms.
 Four Streptomyces strains were selected, which transformed MPA to various
 bioconversion products. These derivs. of MPA (II-VI) were isolated and their
 structures were determined by IR, ¹H, ¹³C NMR and mass spectroscopic methods.
 In the course of bioconversions, mycophenolic acid underwent one or more of
 the following transformations: hydroxylation on the side chain or on the
 lactone ring, amide and alc. formation from the carboxylic acid group,
 oxidative cyclizations of the side chain and glycosylation.

IT 494842-54-5P
 RL: BPN (Biosynthetic preparation); PRP (Properties); PUR (Purification or
 recovery); BIOL (Biological study); PREP (Preparation)
 (microbial transformation of mycophenolic acid)

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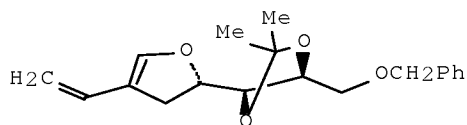
RN 494842-54-5 HCAPLUS
CN Furo[2,3-e]isobenzofuran-8(2H)-one,
3,6-dihydro-6-hydroxy-4-methoxy-5-methyl-2-(tetrahydro-2-methyl-5-oxo-2-furanyl)- (CA INDEX NAME)

Currently available stereo shown.



CC 16-2 (Fermentation and Bioindustrial Chemistry)
IT 133538-73-5P 494841-99-5P 494842-52-3P 494842-54-5P
494842-57-8P
RL: BPN (Biosynthetic preparation); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(microbial transformation of mycophenolic acid)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:769090 HCAPLUS Full-text
DOCUMENT NUMBER: 138:255124
TITLE: Facile synthesis of enantiopure tricyclic furanyl derivatives via tungsten-mediated cycloalkenation reactions and Diels-Alder reactions
AUTHOR(S): Huang, Heh-Lung; Huang, Heh-Chang; Liu, Rai-Shung
CORPORATE SOURCE: Department of Chemistry, National Tsing Hua University, Hsinchu, Taichung, 30013, Taiwan
SOURCE: Tetrahedron Letters (2002), 43(44), 7983-7985
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:255124
GI



I

AB Chiral furanyl diene, (4S,5R)-4-[(2S)-4-ethenyl-2,3-dihydro-2-furanyl]-5-[(phenylmethoxy)methyl]-1,3-dioxolane (I), is easily prepared from cycloalkenation of chiral tungsten alkynol with acetaldehyde, followed by demetalation with Me₃NO. This diene bears a chiral 1,3-dioxolane group to

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control diastereoselective Diels-Alder reactions with electron-deficient olefins. The chiral 1,3-dioxolane substituent of the cycloadducts was degraded to a hydrogen atom to make these mols. possess a common furanyl functionality.

IT 502481-99-4P 502482-04-4P

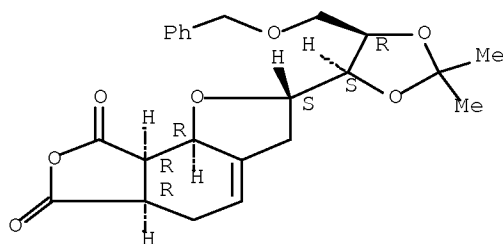
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(facile synthesis of enantiopure tricyclic furanyl derivs. via tungsten-mediated cycloalkenation and Diels-Alder reaction of (ethenyldihydrofuranyl) [(phenylmethoxy)methyl]dioxolane)

RN 502481-99-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2-[(4S,5R)-2,2-dimethyl-5-[(phenylmethoxy)methyl]-1,3-dioxolan-4-yl]-2,3,5,5a,8a,8b-hexahydro-, (2S,5aR,8aR,8bR)- (CA INDEX NAME)

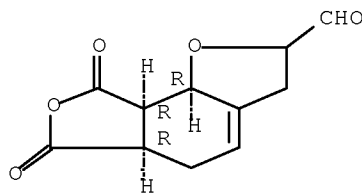
Absolute stereochemistry.



RN 502482-04-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-2-carboxaldehyde, 2,3,5,5a,6,8,8a,8b-octahydro-6,8-dioxo-, (5aR,8aR,8bR)- (CA INDEX NAME)

Absolute stereochemistry.



IT 496920-87-7P

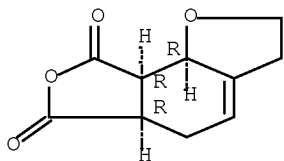
RL: SPN (Synthetic preparation); PREP (Preparation)

(facile synthesis of enantiopure tricyclic furanyl derivs. via tungsten-mediated cycloalkenation and Diels-Alder reaction of (ethenyldihydrofuranyl) [(phenylmethoxy)methyl]dioxolane)

RN 496920-87-7 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2,3,5,5a,8a,8b-hexahydro-, (5aR,8aR,8bR)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))
 Section cross-reference(s): 27
 IT 55904-12-6P 81801-08-3P 502481-96-1P 502481-97-2P 502481-98-3P
 502481-99-4P 502482-00-0P 502482-01-1P 502482-04-4P
 502482-05-5P 502482-06-6P 502613-15-2P 502613-36-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (facile synthesis of enantiopure tricyclic furanyl derivs. via
 tungsten-mediated cycloalkenation and Diels-Alder reaction of
 (ethenyldihydrofuranyl)[(phenylmethoxy)methyl]dioxolane)
 IT 496920-87-7P 496920-89-9P 496920-91-3P 502482-02-2P
 502482-03-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (facile synthesis of enantiopure tricyclic furanyl derivs. via
 tungsten-mediated cycloalkenation and Diels-Alder reaction of
 (ethenyldihydrofuranyl)[(phenylmethoxy)methyl]dioxolane)
 REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:14876 HCAPLUS Full-text
 DOCUMENT NUMBER: 136:216986
 TITLE: Novel Mycophenolic Adenine Bis(phosphonate) Analogues
 As Potential Differentiation Agents against Human
 Leukemia
 AUTHOR(S): Pankiewicz, Krzysztof W.; Lesiak-Watanabe, Krystyna
 B.; Watanabe, Kyoichi A.; Patterson, Steven E.;
 Jayaram, Hiremagalur N.; Yalowitz, Joel A.; Miller,
 Michael D.; Seidman, Michael; Majumdar, Alokesh;
 Prehna, Gerd; Goldstein, Barry M.
 CORPORATE SOURCE: Pharmasset Inc., Tucker, GA, 30084, USA
 SOURCE: Journal of Medicinal Chemistry (2002), 45(3), 703-712
 CODEN: JMCMAR; ISSN: 0022-2623
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 136:216986

AB Novel mycophenolic adenine dinucleotide (MAD) analogs have been prepared as
 potential inhibitors of inosine monophosphate dehydrogenase (IMPDH). MAD
 analogs resemble NAD binding at the cofactor binding domain of IMPDH; however,
 they cannot participate in hydride transfer and therefore inhibit the enzyme.
 The methylenebis(phosphonate) analogs C2-MAD and C4-MAD were obtained by
 coupling 2',3'-O-isopropylideneadenosine 5'-methylenebis(phosphonate) with
 mycophenolic alcs. in the presence of diisopropylcarbodiimide followed by
 deprotection. C2-MAD and C4-MAD were found to inhibit the growth of K562
 cells (IC50 = 0.7 μ M and IC50 = 0.1 μ M, resp.) as potently as mycophenolic
 acid (IC50 = 0.3 μ M). In addition, C2-MAD and C4-MAD triggered vigorous
 differentiation of K562 cells an order of magnitude more potently than
 tiazofurin, and MAD analogs were resistant to glucuronidation in vitro. These

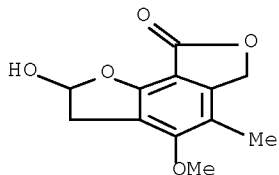
results show that C2-MAD and C4-MAD may be of therapeutic interest in the treatment of human leukemias.

IT 402731-00-4P

RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of mycophenolic adenine bisphosphonate analogs as potential differentiation agents against human leukemia)

RN 402731-00-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one,
3,6-dihydro-2-hydroxy-4-methoxy-5-methyl- (CA INDEX NAME)



CC 33-9 (Carbohydrates)

Section cross-reference(s): 1, 7

IT 402731-00-4P

RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of mycophenolic adenine bisphosphonate analogs as potential differentiation agents against human leukemia)

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:396982 HCAPLUS Full-text

DOCUMENT NUMBER: 133:193098

TITLE: Facile Construction of Novel Polycyclic Ring Systems
Using a Metallocarbenoid-Induced Cyclization of
Acetylenic Diazo Carbonyl Compounds

AUTHOR(S): Padwa, Albert; Straub, Christopher S.

CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta,
GA, 30322, USA

SOURCE: Organic Letters (2000), 2(14), 2093-2095

CODEN: ORLEF7; ISSN: 1523-7060

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 133:193098

AB The Rh(II)-catalyzed reactions of diazo 2-propynylmalonamic acid ester derivs. produce furo[3,4-c]furans in excellent yield. The methodol. was applied to the synthesis of several polyheterocyclic systems by first generating a 2-alkoxy-substituted furan and then allowing it to undergo a subsequent intramol. Diels-Alder cycloaddn. Ring opening of the resulting cycloadduct is followed by deprotonation to furnish a rearranged keto lactone.

IT 289673-95-6P 289673-96-7P 289673-97-8P

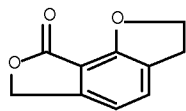
289673-98-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of polycyclic rings via Rh(II)-catalyzed IMDAF cascade of diazomalonnate esters)

RN 289673-95-6 HCAPLUS

10/576758

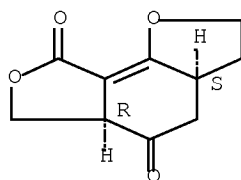
CN Furo[2,3-e]isobenzofuran-8(2H)-one, 3,6-dihydro- (CA INDEX NAME)



RN 289673-96-7 HCAPLUS

CN Furo[2,3-e]isobenzofuran-5,8-dione, 2,3,3a,4,5a,6-hexahydro-, (3aR,5aS)-rel- (CA INDEX NAME)

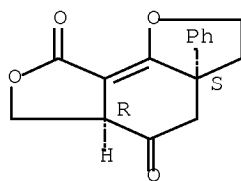
Relative stereochemistry.



RN 289673-97-8 HCAPLUS

CN Furo[2,3-e]isobenzofuran-5,8-dione, 2,3,3a,4,5a,6-hexahydro-3a-phenyl-, (3aR,5aS)-rel- (CA INDEX NAME)

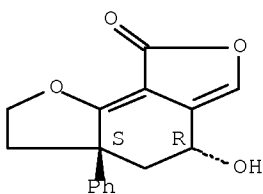
Relative stereochemistry.



RN 289673-98-9 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one, 3,3a,4,5-tetrahydro-5-hydroxy-3a-phenyl-, (3aR,5S)-rel- (CA INDEX NAME)

Relative stereochemistry.



CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))
 Section cross-reference(s): 27
 IT 289673-85-4P 289673-86-5P 289673-88-7P 289673-89-8P 289673-90-1P
 289673-95-6P 289673-96-7P 289673-97-8P
 289673-98-9P 289674-00-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of polycyclic rings via Rh(II)-catalyzed IMDAF cascade of
 diazomalonate esters)
 REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2000:338368 HCAPLUS Full-text
 DOCUMENT NUMBER: 133:135199
 TITLE: Facile Synthesis of Oxa- and Azacyclic Dienes via
 Cycloalkenation of Alkynyltungsten Compounds.
 Stereoselective Construction of Tricyclic Furan and
 Pyran Derivatives via Intramolecular Diels-Alder
 Reaction
 AUTHOR(S): Li, Wen-Tai; Pan, Min-Hui; Wu, Yi-Ru; Wang, Sue-Lein;
 Liao, Fen-Lin; Liu, Rai-Shung
 CORPORATE SOURCE: Department of Chemistry, National Tsing-Hua
 University, Hsinchu, Taiwan
 SOURCE: Journal of Organic Chemistry (2000), 65(12), 3761-3766
 CODEN: JOCEAH; ISSN: 0022-3263
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 133:135199

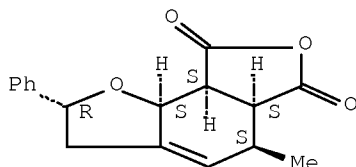
AB A convenient and short synthesis of functionalized oxacyclic and azacyclic
 dienes is developed on the basis of organotungsten chemical Alkynyltungsten
 compds. bearing a tethered alc. and amine are treated with aldehydes and
 BF₃.Et₂O in cold di-Et ether to give tungsten-heterocyclic carbenium salts,
 further leading to tungsten-heterocyclic dienes via deprotonation with Et₃N.
 Hydrodemetalation of these tungsten-heterocyclic dienes is performed by the
 action of anhydrous Me₃NO in MeCN. This method is applicable to the synthesis
 of a number of oxa- and azacyclic dienes, including those tethered with an
 electron-deficient olefin. The oxacyclic 1,3,8-nonatrienes and 1,3,9-
 decatrilenes undergo intramol. Diels-Alder reactions upon heating in toluene,
 yielding tricyclic tetrahydropyran and -furan derivs. with excellent
 diastereoselectivities.

IT 285565-50-6P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (stereoselective preparation of tricyclic furans and pyran via
 cycloalkenation of alkynyltungsten compds. and intramol. Diels-Alder
 reaction)

RN 285565-50-6 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione,
 2,3,5,5a,8a,8b-hexahydro-5-methyl-2-phenyl-, (2R,5S,5aS,8aS,8bS)-rel- (CA
 INDEX NAME)

Relative stereochemistry.

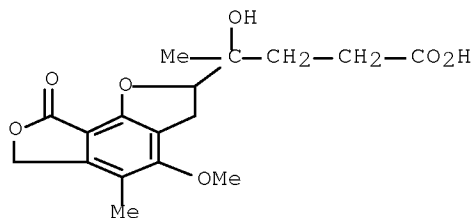


CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
 Section cross-reference(s): 29
 IT 285565-50-6P 285565-61-9P 285565-62-0P 285565-63-1P
 285565-64-2P 285565-65-3P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (stereoselective preparation of tricyclic furans and pyran via
 cycloalkenation of alkynyltungsten compds. and intramol. Diels-Alder
 reaction)
 REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

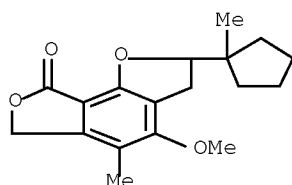
L20 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:153126 HCAPLUS Full-text
 DOCUMENT NUMBER: 130:342877
 TITLE: Degradation products of mycophenolate mofetil in
 aqueous solution
 AUTHOR(S): Hooijmaaijer, Elvira; Brandl, Michael; Nelson, Janis;
 Lustig, David
 CORPORATE SOURCE: Roche Bioscience, Palo Alto, CA, 94304, USA
 SOURCE: Drug Development and Industrial Pharmacy (1999),
 25(3), 361-365
 CODEN: DDIPD8; ISSN: 0363-9045
 PUBLISHER: Marcel Dekker, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The thermal and peroxide-catalyzed degradation products of mycophenolate
 mofetil (I) were studied in aqueous solution at pH 2.0, 3.5, 6.0, and 8.2.
 The major thermal degradation product of I observed was mycophenolic acid
 (II). At pH 6.0 and 8.2, II was the only product observed in the absence of
 peroxide, while at pH 2.0 and 3.5, the lactone analog of mycophenolic acid, a
 hydroxy lactone due to oxygenation of the double bond, and an unidentified
 product were formed. The hydroxy lactone degraded to 4-hydroxy-6-methoxy-7-
 methyl-3-oxo-1,3-dihydroisobenzofuran-5-carbaldehyde on prolonged storage and
 was present in the sample stressed at pH 2. II, the N-oxide of mycophenolate
 mofetil, the hydroxy lactone of mycophenolic acid, and the erythro form of 4-
 methoxy-5-methyl-2-(2-methyl-5-oxotetrahydrofuran-2-yl)-3,6-dihydro-2H-1,7-
 dioxo-as-indacen-8-one were observed in the presence of hydrogen peroxide at
 pH 3.5, 6.0, and 8.2. In addition, at pH 8.2, 4-hydroxy-4-(4-methoxy-5-
 methyl-8-oxo-2,3,6,8-tetrahydro-1,7-dioxo-as-indacen-2-yl)pentanoic acid was
 seen. Peroxide-stressed samples at pH 2.0 gave no major degradation peaks,
 but a small amount of the hydroxy lactone of mycophenolic acid was formed.

IT 224052-52-2 224052-53-3
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (degradation products of mycophenolate mofetil in aqueous solution)
 RN 224052-52-2 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-2-butanoic acid,
 2,3,6,8-tetrahydro-γ-hydroxy-4-methoxy-γ,5-dimethyl-8-oxo-
 (CA INDEX NAME)



RN 224052-53-3 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-8(2H)-one,
 3,6-dihydro-4-methoxy-5-methyl-2-(1-methylcyclopentyl)- (CA INDEX NAME)



CC 63-5 (Pharmaceuticals)
 Section cross-reference(s): 22
 IT 622-40-2, 4-Morpholineethanol 24280-93-1, Mycophenolic acid 26644-06-4
 26675-76-3 67549-56-8 224052-51-1 224052-52-2
 224052-53-3
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (degradation products of mycophenolate mofetil in aqueous solution)
 REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:476714 HCAPLUS Full-text

DOCUMENT NUMBER: 127:149019

ORIGINAL REFERENCE NO.: 127:28789a,28792a

TITLE: Total synthesis of mycophenolic acid

AUTHOR(S): de la Cruz, Ricardo A.; Talamas, Francisco X.;

Vazquez, Alfredo; Muchowski, Joseph M.

CORPORATE SOURCE: Syntex S. A. de C. V., Div. de Investigacion, Morelos,
 62500, Mex.

SOURCE: Canadian Journal of Chemistry (1997), 75(6), 641-645

CODEN: CJCHAG; ISSN: 0008-4042

PUBLISHER: National Research Council of Canada

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 127:149019

AB A total synthesis of mycophenolic acid is reported. Diels-Alder reaction of
 [5-methoxy-3-(1-methoxypropenyl)-4,5-dihydrofuran-2-yloxy]- trimethylsilane
 with 3-benzenesulfinyl-5H-furan-2-one afforded the hexasubstituted nucleus.
 The side chain was constructed from the unveiled aldehyde.

IT 193277-77-9P 193277-88-2P

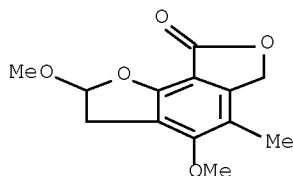
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)

10/576758

(total synthesis of mycophenolic acid)

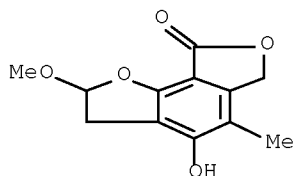
RN 193277-77-9 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one, 3,6-dihydro-2,4-dimethoxy-5-methyl-
(CA INDEX NAME)



RN 193277-88-2 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one,
3,6-dihydro-4-hydroxy-2-methoxy-5-methyl- (CA INDEX NAME)

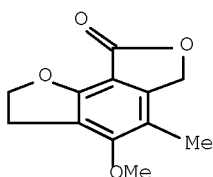


IT 193277-83-7F

RL: SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of mycophenolic acid)

RN 193277-83-7 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one, 3,6-dihydro-4-methoxy-5-methyl- (CA
INDEX NAME)



CC 26-6 (Biomolecules and Their Synthetic Analogs)

IT 13312-25-9P 24953-96-6P 57061-31-1P 138768-41-9P 172151-14-3P

193277-70-2P 193277-73-5P 193277-75-7P 193277-77-9P

193277-79-1P 193277-81-5P 193277-85-9P 193277-88-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

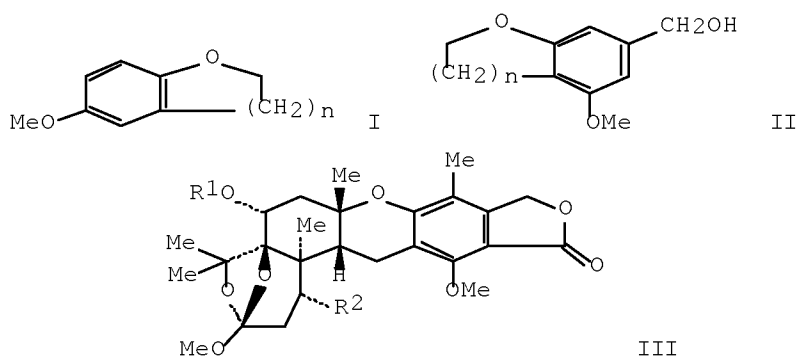
(total synthesis of mycophenolic acid)

IT 24280-93-1P, Mycophenolic acid 193277-83-7F

RL: SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of mycophenolic acid)

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1994:483671 HCAPLUS Full-text
 DOCUMENT NUMBER: 121:83671
 ORIGINAL REFERENCE NO.: 121:15053a,15056a
 TITLE: Relevance of Conformational Constraints to the
 Regioselective Lithiation of Aromatic Diethers.
 Application to the Convenient Construction of the DEF
 Tricyclic Subunit of the Austalides
 AUTHOR(S): Paquette, Leo A.; Schulze, Matthias M.; Bolin, David
 G.
 CORPORATE SOURCE: Evans Chemical Laboratories, Ohio State University,
 Columbus, OH, 43210, USA
 SOURCE: Journal of Organic Chemistry (1994), 59(8), 2043-51
 CODEN: JOCEAH; ISSN: 0022-3263
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 121:83671
 GI



AB The lithiation of I ($n = 1, 2$) is shown to occur at all three sites with a dissimilar kinetic preference. For the dihydrofuran, reaction at the proton labeled $H\beta'$ operates predominantly; in the dihydropyran example, $H\alpha$ is the favored site of deprotonation. These protons represent those that are the most deshielded in the resp. 1H -NMR spectra. The same is true for II ($n = 1, 2$), both of which undergo metalation adjacent to the ring oxygen. No crossover in regioselectivity is observed, presumably because the methoxy substituent is sterically precluded from rotating freely. Mixed complexes (dimers, etc.) or mixed aggregates in low equilibrium concentration are key to understanding the acidification phenomenon of ortho hydrogens. As a consequence of the dominance of regiocontrol by the ring oxygen in II ($n = 2$), a convenient means has been developed for elaboration of the tricyclic eastern sector of the austalide mycotoxins, III [$R_1 = Ac$, $R_2 = H$ (A); $R_1 = R_2 = H$ (B); $R_1 = Ac$, $R_2 = OAc$ (C); $R_1 = H$, $R_2 = OAc$ (D); $R_1 = Ac$, $R_2 = OH$ (E); $R_1 = H$, $R_2 = OH$ (F)].

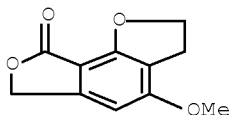
IT 156297-74-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)

10/576758

(preparation of, regioselectivity in)

RN 156297-74-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one, 3,6-dihydro-4-methoxy- (CA INDEX NAME)



CC 30-25 (Terpenes and Terpenoids)

IT 99355-75-6P 99385-73-6P 99385-74-7P 99385-75-8P 152188-40-4P
152188-41-5P 152188-42-6P 152188-47-1P 152188-48-2P 152188-49-3P
152188-50-6P 156297-74-4P 156297-75-5P 156297-76-6P
156297-77-7P 156297-78-8P 156297-79-9P 156297-80-2P 156297-81-3P
156297-82-4P 156297-83-5P 156297-84-6P 156297-85-7P 156297-86-8P
156297-87-9P 156297-88-0P 156297-89-1P 156297-90-4P 156297-91-5P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, regioselectivity in)

L20 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1987:423262 HCAPLUS Full-text

DOCUMENT NUMBER: 107:23262

ORIGINAL REFERENCE NO.: 107:3931a,3934a

TITLE: Preparation of 5-alkyl- and
5-arylalkyl-2-methylbenzofuran-6,7-dicarboxylic acids.
Conversion of 5-arylalkylbenzofuran anhydrides to new
heterocycles

AUTHOR(S): Cabares, Jacques; Mavoungou-Gomes, Louis

CORPORATE SOURCE: Lab. Chim. Org., UER Sci. Med. Pharm., Angers, 49045,
Fr.

SOURCE: Bulletin de la Societe Chimique de France (1986), (3),
401-12

CODEN: BSCFAS; ISSN: 0037-8968

DOCUMENT TYPE: Journal

LANGUAGE: French

OTHER SOURCE(S): CASREACT 107:23262

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Diels-Alder reaction of 5-alkyl-2-acetonilfurans (I; R = Me, Et, PhCH₂CH₂,
etc.) with MeO₂CC.tplbond.CCO₂Me gave oxabicycloheptadienedicarboxylates II
(same R). Treating II with BF₃.OEt₂ gave benzofuranedicarboxylates III (or
their anhydrides or acids). Cyclization reactions of these
benzofurandicarboxylate derivs. gave polycyclic benzofuran derivs. Thus,
cyclization of III (R = Me) with NH₂NH₂ gave the furophthalazinedione IV.
Among the other polycyclic compds. prepared were the anthrafurancarboxylic
acid derivative V and the benzocycloheptafurotriazolophthalazxine derivs. VI.

IT 73606-75-4P 73606-76-5P 73606-77-6P
108604-53-1P 108604-54-2P 108604-55-3P
108604-56-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

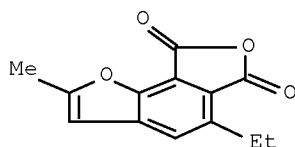
10/576758

(Reactant or reagent)

(preparation and reactions of)

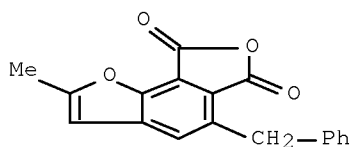
RN 73606-75-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 5-ethyl-2-methyl- (CA INDEX NAME)



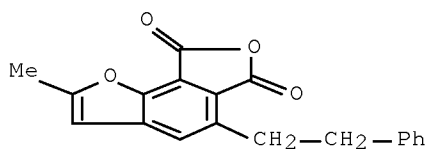
RN 73606-76-5 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2-methyl-5-(phenylmethyl)- (CA INDEX NAME)



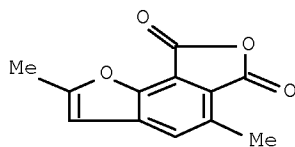
RN 73606-77-6 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2-methyl-5-(2-phenylethyl)- (CA INDEX NAME)



RN 108604-53-1 HCAPLUS

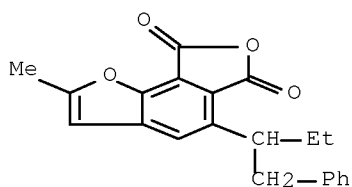
CN Furo[2,3-e]isobenzofuran-6,8-dione, 2,5-dimethyl- (CA INDEX NAME)



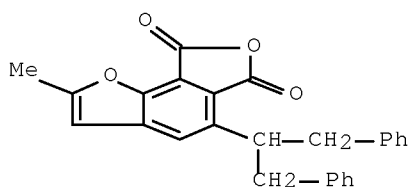
RN 108604-54-2 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2-methyl-5-[1-(phenylmethyl)propyl]-

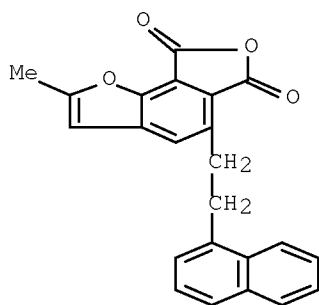
(CA INDEX NAME)



RN 108604-55-3 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-6,8-dione,
 2-methyl-5-[2-phenyl-1-(phenylmethyl)ethyl]- (CA INDEX NAME)



RN 108604-56-4 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-6,8-dione, 2-methyl-5-[2-(1-naphthalenyl)ethyl]-
 (CA INDEX NAME)

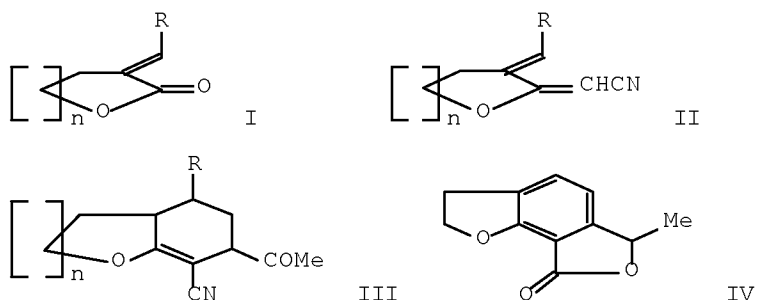


CC 28-1 (Heterocyclic Compounds (More Than One Hetero Atom))
 Section cross-reference(s): 27
 IT 68654-70-6P 73606-75-4P 73606-76-5P
 73606-77-6P 73606-81-2P 73606-82-3P 73606-85-6P
 73606-87-8P 73606-93-6P 108604-52-0P 108604-53-1P
 108604-54-2P 108604-55-3P 108604-56-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and reactions of)

L20 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN

10/576758

ACCESSION NUMBER: 1987:101992 HCAPLUS Full-text
 DOCUMENT NUMBER: 106:101992
 ORIGINAL REFERENCE NO.: 106:16699a,16702a
 TITLE: Novel dienes from α -ylidene and
 α -alkoxylydene lactones. Useful intermediates
 for the synthesis of benzofurans
 AUTHOR(S): Murray, Alistair W.; Murray, Neil D.; Reid, Robert G.
 CORPORATE SOURCE: Dep. Chem., Univ. Dundee, Dundee, DD1 4HN, UK
 SOURCE: Journal of the Chemical Society, Chemical
 Communications (1986), (16), 1230-2
 CODEN: JCCCAT; ISSN: 0022-4936
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 106:101992
 GI



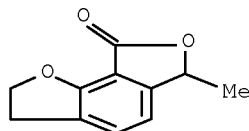
AB Reaction of lactones I (R = H, Et, Ph, OMe, OEt, n = 1; R = Ph, n = 2) with BuLi and MeCN in THF at -78° for 3 h gave mixts. of (Z)- and (E)-dienes II (R, n as before). Reaction of II with MeCOCH:CH₂ gave the tetrahydrobenzofuran III in 23-40% overall yield from I. III (R = H, n = 1) was converted to benzofuranolactone IV in 3 steps.

IT 106895-67-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

RN 106895-67-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one, 3,6-dihydro-6-methyl- (CA INDEX NAME)



CC 27-7 (Heterocyclic Compounds (One Hetero Atom))

Section cross-reference(s): 23

IT 106895-60-7P 106895-61-8P 106895-62-9P 106895-63-0P 106895-64-1P

106895-67-4P 106895-68-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L20 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1980:198336 HCAPLUS Full-text

DOCUMENT NUMBER: 92:198336

ORIGINAL REFERENCE NO.: 92:32131a,32134a

TITLE: Preparation of 6,7-dicarboxybenzofurans and
application to the synthesis of new heterocyclics

AUTHOR(S): Cabares, Jacques; Gomes, Louis Mavoungou

CORPORATE SOURCE: Lab. Chim. Org., Unites Enseign. Rech. Sci. Med.
Pharm., Angers, 49000, Fr.

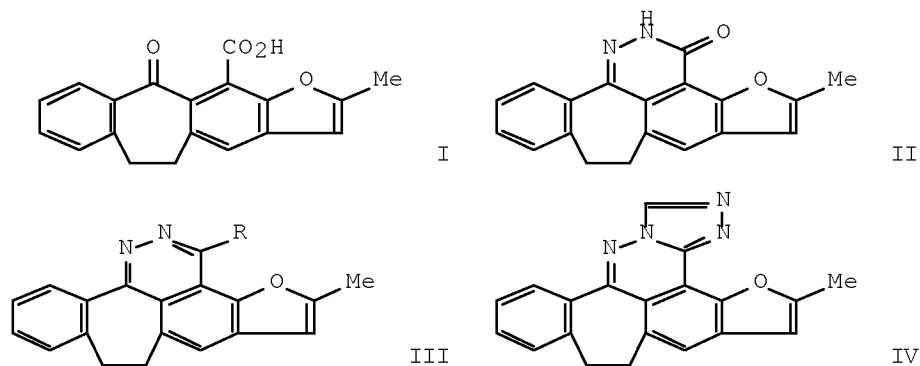
SOURCE: Comptes Rendus des Seances de l'Academie des Sciences,
Serie C: Sciences Chimiques (1979), 289(12), 321-4
CODEN: CHDCAQ; ISSN: 0567-6541

DOCUMENT TYPE: Journal

LANGUAGE: French

OTHER SOURCE(S): CASREACT 92:198336

GI



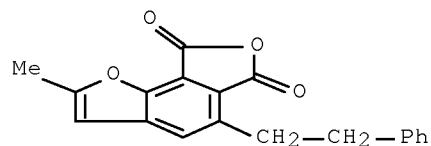
AB The γ -oxo acid I, which was prepared by the cyclocondensation of 2-methyl-5-phenethyl-6,7-benzofurandicarboxylic anhydride, was converted to fused phthalazinone II. I was treated with N_2H_4 to yield II, which was treated with $POCl_3$ to give III (R = Cl), which was treated with N_2H_4 to give III (R = $NHNH_2$). The latter reacted with $HC(OEt)_3$ to give triazolophthalazine IV.

IT 73606-77-6P 73606-80-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and cyclocondensation reaction of)

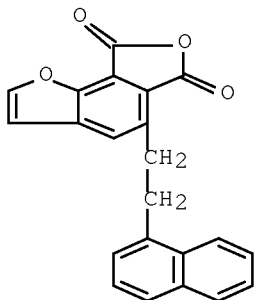
RN 73606-77-6 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2-methyl-5-(2-phenylethyl)- (CA INDEX
NAME)



RN 73606-80-1 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 5-[2-(1-naphthalenyl)ethyl]- (CA INDEX NAME)



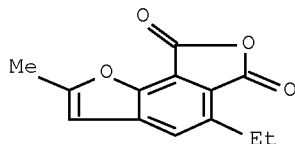
IT 73606-75-4P 73606-76-5P 73606-78-7P

73606-79-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

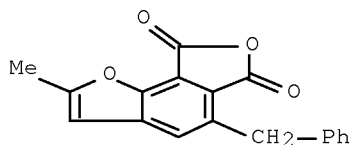
RN 73606-75-4 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 5-ethyl-2-methyl- (CA INDEX NAME)



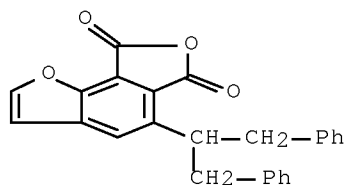
RN 73606-76-5 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 2-methyl-5-(phenylmethyl)- (CA INDEX NAME)

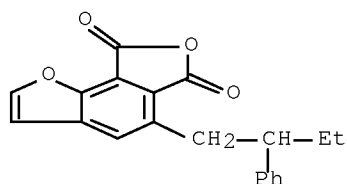


RN 73606-78-7 HCAPLUS

CN Furo[2,3-e]isobenzofuran-6,8-dione, 5-[2-phenyl-1-(phenylmethyl)ethyl]- (CA INDEX NAME)

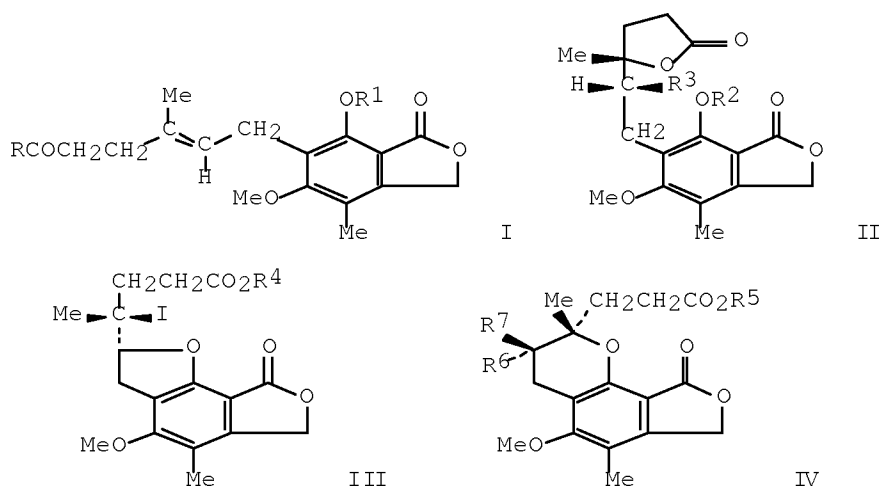


RN 73606-79-8 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-6,8-dione, 5-(2-phenylbutyl)- (CA INDEX NAME)



CC 28-16 (Heterocyclic Compounds (More Than One Hetero Atom))
 Section cross-reference(s): 27
 IT ~~73606-77-6P~~ ~~73606-80-1P~~
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and cyclocondensation reaction of)
 IT ~~73606-75-4P~~ ~~73606-76-5P~~ ~~73606-78-7P~~
~~73606-79-8P~~ ~~73606-86-7P~~ ~~73606-88-9P~~ ~~73606-89-0P~~
~~73606-90-3P~~ ~~73606-94-7P~~ ~~73606-95-8P~~
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

L20 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1978:170004 HCAPLUS Full-text
 DOCUMENT NUMBER: 88:170004
 ORIGINAL REFERENCE NO.: 88:26795a,26798a
 TITLE: Derivatives of mycophenolic acid
 AUTHOR(S): Carman, Raymond M.
 CORPORATE SOURCE: Dep. Chem., Univ. Queensland, St. Lucia, Australia
 SOURCE: Australian Journal of Chemistry (1978), 31(2), 353-64
 CODEN: AJCHAS; ISSN: 0004-9425
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB About 22 mycophenolic and mycochromenic acid derivs. I-IV (R = OH, OMe, n-octyloxy, n-octylamino; R1, R2 = H, Ac; R3, R7 = H, Br, I; R4 = H, Me; R5 = H, Me, Et; R6 = H, I) were prepared and their structures determined according to their NMR spectra.

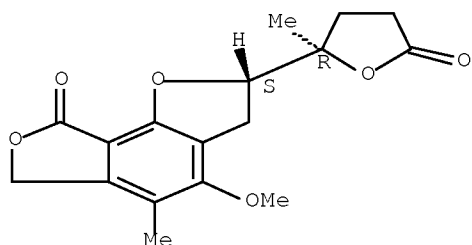
IT 66342-04-9

RL: PRP (Properties)
(NMR of)

RN 66342-04-9 HCAPLUS

CN Furo[2,3-e]isobenzofuran-8(2H)-one,
3,6-dihydro-4-methoxy-5-methyl-2-[(2R)-tetrahydro-2-methyl-5-oxo-2-furanyl]-, (2S)-rel- (CA INDEX NAME)

Relative stereochemistry.



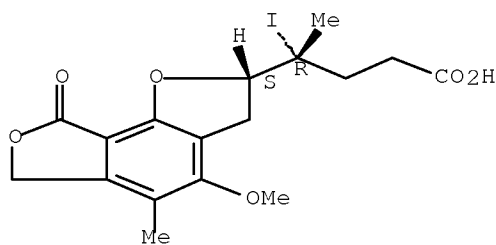
IT 66341-95-5P 66341-96-6P 66342-02-7P
66342-09-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 66341-95-5 HCAPLUS

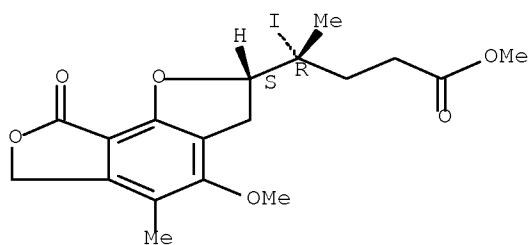
CN Benzo[2,1-b:3,4-c']difuran-2-butanoic acid,
2,3,6,8-tetrahydro-γ-iodo-4-methoxy-γ,5-dimethyl-8-oxo-,
(γR,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.



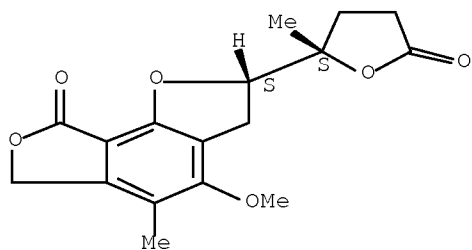
RN 66341-96-6 HCAPLUS
 CN Benzo[2,1-b:3,4-c']difuran-2-butanoic acid,
 2,3,6,8-tetrahydro-γ-iodo-4-methoxy-γ,5-dimethyl-8-oxo-,
 methyl ester, (γR,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

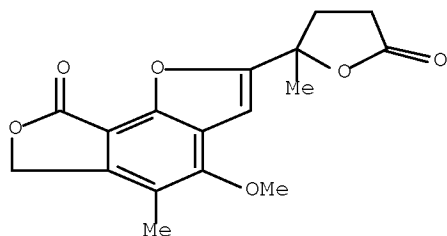


RN 66342-02-7 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-8(2H)-one,
 3,6-dihydro-4-methoxy-5-methyl-2-[(2R)-tetrahydro-2-methyl-5-oxo-2-
 furanyl]-, (2R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 66342-09-4 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-8(6H)-one,
 4-methoxy-5-methyl-2-(tetrahydro-2-methyl-5-oxo-2-furanyl)- (CA INDEX
 NAME)



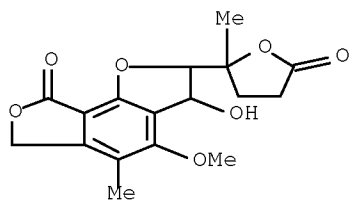
CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))
 IT 66342-03-8 66342-04-9 66342-05-0 66342-06-1 66342-07-2
 66342-08-3
 RL: PRP (Properties)
 (NMR of)
 IT 24243-38-7P 31858-66-9P 66341-84-2P 66341-85-3P 66341-86-4P
 66341-88-6P 66341-89-7P 66341-90-0P 66341-93-3P 66341-95-5P
 66341-96-6P 66341-98-8P 66341-99-9P 66342-01-6P
 66342-02-7P 66342-09-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

L20 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1970:484854 HCAPLUS Full-text
 DOCUMENT NUMBER: 73:84854
 ORIGINAL REFERENCE NO.: 73:13855a,13858a
 TITLE: Microbial modification of mycophenolic acid
 AUTHOR(S): Jones, Derrick Fleet; Moore, Ronald Haywood; Crawley,
 G. C.
 CORPORATE SOURCE: Pharm. Div., Imp. Chem. Ind. Ltd., Macclesfield, UK
 SOURCE: Journal of the Chemical Society [Section] C: Organic
 (1970), (12), 1725-37
 CODEN: JSOAX; ISSN: 0022-4952
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB On incubation with selected microorganisms mycophenolic acid underwent one or more of the following transformations: (a) oxygenation of the 4-Me group, (b) oxygenation of the 3'-Me group and lactonization, (c) oxidation at C-3, (d) loss of the double bond and oxidation at C-4', (e) oxygenation of the double bond, (f) oxygenation and cyclization of the terpenoid substituent, (g) oxidative cyclization of the terpenoid substituent and (h) combination of the carboxy group with the amino groups of glycine and alanine. The structures of the fermentation products were established by spectroscopic methods. The biogenesis of the fermentation products is discussed and some preps. of cyclic ethers from mycophenolic acid derivs. are described.

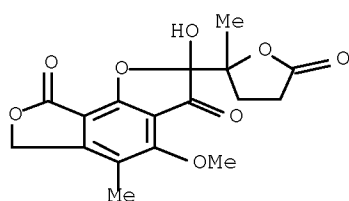
IT 26644-08-6 26644-09-7 26644-12-2
 RL: FORM (Formation, nonpreparative)
 (formation of, from mycophenolic acid by microorganisms)

RN 26644-08-6 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-8(2H)-one,
 3,6-dihydro-3-hydroxy-4-methoxy-5-methyl-2-(tetrahydro-2-methyl-5-oxo-2-furanyl)- (CA INDEX NAME)



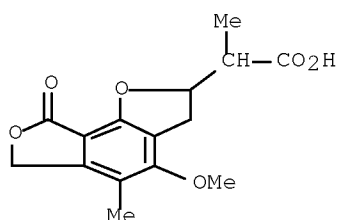
RN 26644-09-7 HCAPLUS

CN Furo[2,3-e]isobenzofuran-3,8(2H,6H)-dione,
2-hydroxy-4-methoxy-5-methyl-2-(tetrahydro-2-methyl-5-oxo-2-furanyl)- (CA
INDEX NAME)



RN 26644-12-2 HCAPLUS

CN Furo[2,3-e]isobenzofuran-2-acetic acid,
2,3,6,8-tetrahydro-4-methoxy-α,5-dimethyl-8-oxo- (CA INDEX NAME)

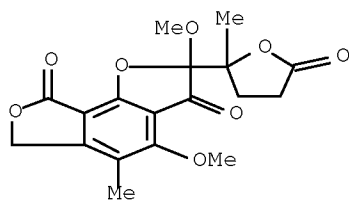


IT 26644-10-0P 26693-54-9P

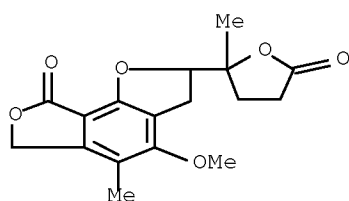
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 26644-10-0 HCAPLUS

CN Furo[2,3-e]isobenzofuran-3,8(2H,6H)-dione,
2,4-dimethoxy-5-methyl-2-(tetrahydro-2-methyl-5-oxo-2-furanyl)- (CA INDEX
NAME)



RN 26693-54-9 HCAPLUS
 CN Furo[2,3-e]isobenzofuran-8(2H)-one,
 3,6-dihydro-4-methoxy-5-methyl-2-(tetrahydro-2-methyl-5-oxo-2-furanyl)-
 (CA INDEX NAME)



CC 8 (Microbial Biochemistry)
 IT 26644-01-9 26644-02-0 26644-03-1 26644-06-4 26644-07-5
 26644-08-6 26644-09-7 26644-12-2 26644-15-5
 26644-17-7 26644-26-8 26644-28-0 26644-31-5 26644-33-7
 26644-34-8 26675-76-3 26675-77-4 26840-17-5 30891-96-4
 RL: FORM (Formation, nonpreparative)
 (formation of, from mycophenolic acid by microorganisms)
 IT 26644-04-2P 26644-05-3P 26644-10-0P 26644-11-1P
 26644-13-3P 26644-16-6P 26644-18-8P 26644-19-9P 26644-20-2P
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 26853-38-3P 26853-43-0P 26853-44-1P 26853-45-2P 26853-54-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

10/576758

***** SEARCH HISTORY *****

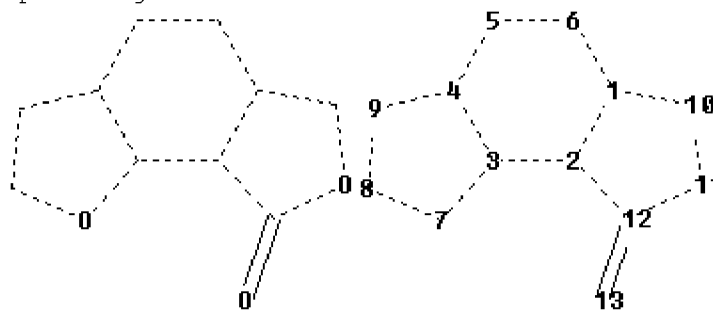
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FILE 'REGISTRY' ENTERED AT 10:58:57 ON 12 DEC 2008

L1 STRUCTURE UPLOADED
 D

Uploading L1.str



chain nodes :

13

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12

chain bonds :

12-13

ring bonds :

1-2 1-6 1-10 2-3 2-12 3-4 3-7 4-5 4-9 5-6 7-8 8-9 10-11 11-12

exact/norm bonds :

1-2 1-6 1-10 2-3 2-12 3-4 3-7 4-5 4-9 5-6 7-8 8-9 10-11 11-12 12-13

isolated ring systems :

containing 1 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom

11:Atom 12:Atom 13:CLASS

L2 4 SEA SSS SAM L1
 D SCAN

L3 52 SEA SSS FUL L1
 SAVE TEM L3 COV758REGL1/A

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L5 5 SEA ABB=ON PLU=ON L4 AND PHARMAC?/SC, SX

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L6 1 SEA ABB=ON PLU=ON 850078-65-8/RN
 D SCAN

L7 1 SEA ABB=ON PLU=ON 66341-91-1/RN
 D SCAN

10/576758

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L9 1 SEA ABB=ON PLU=ON L4 AND L8

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L10 1 SEA ABB=ON PLU=ON 402731-00-4/RN
D SCAN

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L12 50007 SEA ABB=ON PLU=ON LIU J?/AU
L13 12465 SEA ABB=ON PLU=ON ZHENG Y?/AU
L14 2276 SEA ABB=ON PLU=ON QIN X?/AU
L15 15784 SEA ABB=ON PLU=ON YANG L?/AU
L16 3525 SEA ABB=ON PLU=ON DONG Z?/AU
L17 15567 SEA ABB=ON PLU=ON WANG R?/AU
L18 3211 SEA ABB=ON PLU=ON TAN J?/AU
L19 3 SEA ABB=ON PLU=ON (((L12 OR L13 OR L14 OR L15 OR L16 OR L17
OR L18)) AND L4) OR (L4 AND L8)
L20 19 SEA ABB=ON PLU=ON L4 NOT L19
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SAVE TEMP L20 COV758HCAP/A

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FILE 'HCAPLUS' ENTERED AT 11:18:11 ON 12 DEC 2008

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FILE 'HCAPLUS' ENTERED AT 11:18:28 ON 12 DEC 2008
D L19 1-3 IBIB ABS HITSTR

FILE 'STNGUIDE' ENTERED AT 11:18:29 ON 12 DEC 2008
D QUE L20

FILE 'HCAPLUS' ENTERED AT 11:18:55 ON 12 DEC 2008
D L20 1-19 IBIB ABS HITSTR HITIND

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